GEOG 290 / REN R 466

CLIMATE CHANGE IN THE CIRCUMPOLAR WORLD/CLIMATE CHANGE AND THE NORTH

In Winter 2020, GEOG 290 Climate Change in the Circumpolar World is being offered at Yukon University concurrent with the University of Alberta's REN R 466 Climate Change and the North, as part of the Northern Environmental and Conservation Sciences, B.Sc. Program. All students registered in GEOG 290 or REN R 466 must adhere to requirements outlined in this course syllabus. University of Alberta students must also be aware of, and adhere to, the University's Code of Student Behaviour, referenced in the outline; Yukon University students must be aware of, and adhere to, Yukon University's Academic Regulations, also referenced in the outline.

INSTRUCTOR:	Dr. Marianne Douglas Instructor, Northern ENCS Program School of Science, Yukon University Renewable Resources, University of Alberta
OFFICE HOURS:	By appointment
OFFICE LOCATION:	Virtual until further notice due to Covid-19
TELEPHONE/E-MAIL:	msdougla@ualberta.ca OR mdouglas@yukonu.ca

CLASS DAYS & TIMES:	Tuesdays from 9-10:30 am; 1.5 hours/week of asynchronous content.
CLASS LOCATION:	Online and via video

COURSE DESCRIPTION:

Current and projected impacts of climate change on the circumpolar north, including the land, its biota, northern communities, and drivers that shape these interactions. (From the University of Alberta Calendar).

This course begins with an overview of climate change as an issue, its detection, historical evidence and scientific basis, and then examines potential impacts of change on northern environments and socioeconomic systems. (From the Yukon University Calendar)

STUDENT LEARNING OUTCOMES AND COMPETENCIES:

Upon successful completion of this course students will be able to do the following:

- Understand the many dimensions of climate change;
- Evaluate the evidence regarding climate change - both current and past – and an understanding of the level of uncertainty in predicting changes in climate;
- Understand why climate change is more dramatic in the North;
- Demonstrate knowledge of how the North has responded to ecological, economic and cultural changes in the past, and how the North may respond to plausible scenarios of future climate change;
- Demonstrate awareness of the complexity of developing responses to climate change; and
- Gain confidence in critical thinking, writing, oral presentation and research skills.

COURSE FORMAT (3-0-0):

This 13-week course is offered twice a week via two 1.5 hour lectures on Tuesday and Thursday mornings:

- Tuesday lectures will be synchronous via Zoom delivery and
- Thursday lectures will be asynchronous on-line.

The class will mix lectures with discussion and student presentations. The course is divided into topics (described in the outline). There is no single text prescribed for the

course and students will be expected to read assigned readings, and are encouraged to explore and read supplementary material. Other media may be included or suggested. All course submissions (except exams) will be digital.

COURSE PREREQUISITES AND/OR CO-REQUISITES:

For students taking the course as GEOG 290: 2nd-year standing in the School of Liberal Arts or School of Science.

For students taking the course as RENR 466: Enrolment in the University of Alberta BSc in Environmental and Conservation Sciences (ENCS) Northern Systems Major, or consent of Department.

This course may be of interest to managers and practitioners, who are not in a diploma program at Yukon University or another institution, but work in a field that would benefit from a background in climate change. Participation by these students is encouraged, and these students are strongly recommended to contact the course's instructor prior to enrolling. Students at other institutions are welcome to take GEOG 290. Such students should have a Letter of Permission from their home institution if they intend to apply this course to their programs.

RELATED COURSE REQUIREMENTS

GEOG 290 is the course offering through Yukon University. RENR 466 is the course offering through the University of Alberta. The course syllabus is the same for the two offerings, but in general expectations for RENR 466 will be elevated. This may include additional required reading, enhanced module exercises, a seminar (rather than a presentation), and modified or supplementary exam questions.

Students will also be expected to use Microsoft Excel, Word and PowerPoint during the course. YukonU students can download for free the full suite of Microsoft Office applications (Word, Excel, PowerPoint, OneNote, Outlook) and other internet based services (OneDrive, Sway, etc). Information is available here: https://www.yukonu.ca/student-life/technical-resources (scroll down to the section "Office 365 & Email").

REQUIRED TEXTBOOKS/MATERIALS:

There is no specific textbook for the class. We will draw from existing online resources for all activities. Key resources include the following:

- Intergovernmental Panel on Climate Change Reports https://www.ipcc.ch/2019/
- Canada's Changing Climate Report 2019 https://changingclimate.ca/CCCR2019/
- The Snow, Water, Ice, Permafrost in the Arctic assessment report (http://www.amap.no/swipa2017)
- The Global Change Programme Climate Science Special Report - Fourth National Climate Assessment (NCA4), Volume I (https://science2017.globalchange.gov/)

Readings from these materials and other online resources will be assigned during the course.

COURSE WEBSITE

The course website will be accessed through Yukon University's Moodle system. Lecture notes, links to assigned readings, student assignments and submissions, and gradebooks will be accessed via this Moodle system.

YUKON UNIVERSITY ACADEMIC STANDARDS AND REGULATIONS

Information on academic standing and student rights and responsibilities can be found in the current Academic Regulations that are posted on the Student Services/ Admissions & Registration web page.

Plagiarism

Plagiarism is a serious academic offence. Plagiarism occurs when a student submits work for credit that includes the words, ideas, or data of others, without citing the source from which the material is taken. Plagiarism can be the deliberate use of a whole piece of work, but more frequently it occurs when students fail to acknowledge and document sources from which they have taken material according to an accepted manuscript style (e.g., APA, CSE, MLA, etc.). Students may use sources which are public domain or licensed under Creative Commons; however, academic documentation standards must still be followed. Except with explicit permission of the instructor, resubmitting work which has previously received credit is also considered plagiarism. Students who

plagiarize material for assignments will receive a mark of zero (F) on the assignment and may fail the course. Plagiarism may also result in dismissal from a program of study or the University.

UNIVERSITY OF ALBERTA ACADEMIC INTEGRITY AND CODE OF STUDENT BEHAVIOUR

Academic Integrity

The University of Alberta is committed to the highest standards of academic integrity and honesty. Students are expected to be familiar with these standards regarding academic honesty and to uphold the policies of the University in this respect. Students are particularly urged to familiarize themselves with the provisions of the Code of Student Behaviour (online at www.governance.ualberta.ca) and avoid any behaviour which could potentially result in suspicions of cheating, plagiarism, misrepresentation of facts and/or participation in an offence. Academic dishonesty is a serious offence and can result in suspension or expulsion from the University.

Code of Student Behaviour

All students at the University of Alberta are subject to the Code of Student Behaviour, as outlined at: http://www.governance.ualberta.ca/en/CodesofConductandResidenceCommunityStandards/CodeofStudentBehaviour.aspx Please familiarize yourself with it and ensure that you do not participate in any inappropriate behavior as defined by the Code. Key components of the code include the following statements.

30.3.2(1) No Student shall submit the words, ideas, images or data of another person as the Student's own in any academic writing, essay, thesis, project, assignment, presentation or poster in a course or program of study.

30.3.2(2) c. No Student shall represent another's substantial editorial or compositional assistance on an assignment as the Student's own work.

PROFESSIONALISM AND CLASSROOM RULES OF ENGAGEMENT

Students are expected to attend all lectures and labs, be engaged and courteous in all course activities, and to be on time for class. Please do not use cellular phones during class. Laptops are permitted for note taking and in-class work; however, please do not

use laptops in class for non-class-related activities. While in computer labs, students are expected to refrain from using the computers to engage in non-class-related activities (e.g. Facebook, etc.).

COURSE REQUIREMENTS/EVALUATION:

Evaluation will be based upon grades earned from class participation, three assignments, one mid-term test and a final exam.

Attendance and Participation

A participation mark of up to 5% is attributed to attendance and participation in-class discussions.

Assignments

There are three assignments that will be completed during the course, including one requiring climate data analyses and interpretation, one poster/fact sheet, and one presentation. All assignments must be completed by each student in order to pass the course. RENR 466 assignments will require greater in depth analyses and length of presentation than those for GEOG 290.

Exams

There will be one mid-term test and one final exam. **Both these exams will be take home**. Missed mid-terms due to illness may be re-scheduled with an official medical excuse. A missed final exam will be rescheduled as per Yukon University policy.

Due Dates and Late Assignments

All assignments, other than presentations, are due by the beginning of class, i.e., 09:00 AM on the due date. Electronic copies should be uploaded to the course website or emailed directly to the instructor. No extensions will be granted and late assignments will be penalized 5% per day.

Evaluation

The course grade will be determined as follows:

Students enrolled in the course as GEOG 290:

Assignment/test/exam	**Percent**	**Due Date**
Assignment #1	10	January 21
Mid-term test	20	February 19
Assignment #2	20	March 11
Presentation	20	Post Reading Week
Participation	5	
Final exam	25	April 20
Total	100	

Students enrolled in the course as RENR 466:

Assignment/test/exam	**Percent**	**Due Date**
Assignment #1	10	January 21
Mid-term test	20	February 19
Assignment #2	20	March 11
Presentation	20	Post Reading Week
Participation	5	
Final exam	25	April 20
Total	100	

Assignment of grades

The total numerical score will be converted to a grade on Yukon University's letter grading system.

Letter grade	Numerical Range
A+	95-100
A	86-94
A-	80-85
B+	75-79
B	70-74
B-	65-69
C+	62-64
C	58-61
C-	55-57
D	50-54
F	0-49

RECORDING OF LECTURES, LABS, ETC.:

Audio or video recording, digital or otherwise, of lectures, labs, seminars or any other teaching environment by students is allowed only with the prior written consent of the instructor or as a part of an approved accommodation plan. Student or instructor content, digital or otherwise, created and/or used within the context of the course is to be used solely for personal study, and is not to be used or distributed for any other purpose without prior written consent from the content author(s).

Please note that some classes may be recorded using web conferencing software, and links to recordings may be posted on the class website.

YUKON FIRST NATIONS CORE COMPETENCY

Yukon University recognizes that a greater understanding and awareness of Yukon First Nations history, culture and journey towards self-determination will help to build positive relationships among all Yukon citizens. As a result, to graduate from ANY Yukon University program, you will be required to achieve core competency in knowledge of Yukon First Nations. For details, please see www.yukonu.ca/yfnccr.

ACADEMIC ACCOMMODATION

Reasonable accommodations are available for students requiring an academic accommodation to fully participate in this class. These accommodations are available for students with a documented disability, chronic condition or any other grounds specified in section 8.0 of the Yukon University Academic Regulations (available on the Yukon University website). It is the student's responsibility to seek these accommodations. If a student requires an academic accommodation, they should contact the Learning Assistance Centre (LAC): lac@yukonu.ca.

EQUIVALENCY/TRANSFERABILITY:

Transfer options for GEOG 290 can be investigated using the BC Transfer Guide For current information on course transferability see http://www.bctransferguide.ca

Tentative Schedule

Week	Date	Topics/Modules
1	5 January	Introduction to the course; Introduction to circumpolar regions and their climates; Introduction to scientific basis of climate change;
	7 Jan	
2	12 Jan	Climate change cont'd
	14 Jan	
3	19 Jan	Paleoclimates
	21 Jan	Assignment #1 due (January 21)
4	26 Jan	Climate drivers
	28 Jan	
5	2 February	Carbon; climate models
	4 Feb	
6	9 Feb	Impacts
	11 Feb	
7	16 Feb	Policy responses to climate change; Midterm review
	19 Feb	Midterm (February 19)
8	23 Feb	Reading Week
	25 Feb	
9	2 March	Responding to climate change: Adaptation
	4 Mar	
10	9 Mar	Responding to Climate Change: Adaptation
	11 Mar	Assignment #2 due (March 11)
	16 Mar	Responding to Climate Change
	18 Mar	
11	23 Mar	Responding to Climate Change: Mitigation; Presentations (weeks 11-14)
	25 Mar	
12	30 Mar	Responding to Climate Change: Mitigation; Presentations cont'd
	1 April	
13	6 Apr	Presentations cont'd
	8 Apr	
14	13 Apr	Last day of classes; Course review. Final Exam review.
	20 Apr	Take Home Final Exam Due 5:00 PM